

# EXHIBIT E



**EXHIBIT E**  
**NET BENEFIT ANALYSIS**  
**FOR**  
**EFFICIENT WATER MANAGEMENT PRACTICES**  
**BY AGRICULTURAL WATER SUPPLIERS**

**AB 3616 Water Management Act of 1990**

November 13, 1996

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## Introduction to Net Benefit Analysis for EWMPs

The purpose of evaluating and implementing EWMPs is to achieve more efficient water management where necessary. This exhibit describes an analytical framework for evaluating the EWMPs in Exhibit A, Lists B and C of the Memorandum of Understanding. The Net Benefit Analysis takes into consideration the technical, environmental, socioeconomic, financial, and third party factors affected by each EWMP, thus helping to determine whether and in what manner implementation may be appropriate.

The net benefit analysis provides guidance to agricultural water suppliers, who voluntarily sign the MOU, for evaluating which EWMPs are appropriate for their service area. Completing Table 1 (EWMP Analysis Summary Table), while minimizing unnecessary paperwork, is the ultimate goal of this Exhibit. The following description of how Table 1 is completed will help illustrate the process is not as complicated as it first appears.

Part 1 of this Exhibit allows for an exemption process that describes what is needed to fill in the first three columns on Table 1. Pursuant to Section 4.02 of this MOU, a detailed net benefit analysis is not required for EWMPs on List B if the EWMP has been fully implemented, is demonstrably inappropriate, or is technically infeasible. No further analysis is required if any one of the preceding conditions can be demonstrated to the satisfaction of the Agricultural Water Management Council.

Part 2 is the analytical procedure for EWMPs 1, 2, 3, and 4 in List B of the MOU. No net benefit analysis is required for these practices, so those columns are shaded in Table 1. The analysis will only help determine the extent to which the water supplier is able to facilitate implementing these practices.

Parts 3, 4, 5, and 6 contain the net benefit analysis for EWMPs 5-11 found in Lists B and C. Part 3 requests general information. Part 4 asks questions relating to environmental and third party effects. Parts 5 and 6 are the economic and financial analyses respectively. The analysis is similar for each EWMP so it becomes simpler after the initial analysis. EWMPs 5-9, from List B in the MOU, can be exempted from this analysis as described in Part 1; however, EWMPs 10 and 11 from List C in the MOU cannot.

Part 7 is a summary of analysis for each EWMP.

It is important to note that, pursuant to Section 4.01(E) of the MOU, a water supplier may request a variance from any EWMP if certain conditions are met.

## Exemption Process

Pursuant to Section 4.02, Exemption Criteria, a detailed net benefit analysis is not required and an EWMP will be exempted if any one of the following conditions can be clearly demonstrated to the satisfaction of the Council:

1. EWMP is being implemented at a satisfactory level; or
2. EWMP is demonstrably inappropriate; or
3. EWMP is technically infeasible, given current technology or prevailing local conditions.

Lack of legal authority or funds does not exempt a water supplier from performing a detailed net benefit analysis and inclusion of that EWMP and its analysis in the Water Management Plan (WMP). Legal and funding conditions may change with subsequent updates of the plans and make implementation of such EWMPs possible at a later time.

In the absence of such conditions, as above, a detailed net benefit analysis must be performed. Pursuant to the net benefit analysis, an EWMP may be exempted from implementation if the analysis demonstrates that any one of the following apply.

1. EWMP has a net negative economic benefit for the water supplier during the term of the plan, provided that the water supplier has made a good faith effort to share the costs with other anticipated beneficiaries of the plan; or
2. Adequate funds (including funds from other beneficiaries of the plan) are not available, and cannot reasonably be expected to be made available, for implementation of EWMP during the term of the plan; or
3. EWMP has net negative social benefit(s); or
4. Lack of legal authority (in accordance with the Section 4.02 of the MOU); or
5. EWMP has negative impacts on the environment or on third parties.

# A.B. 3616 EWMP Net Benefit Analysis Flowchart

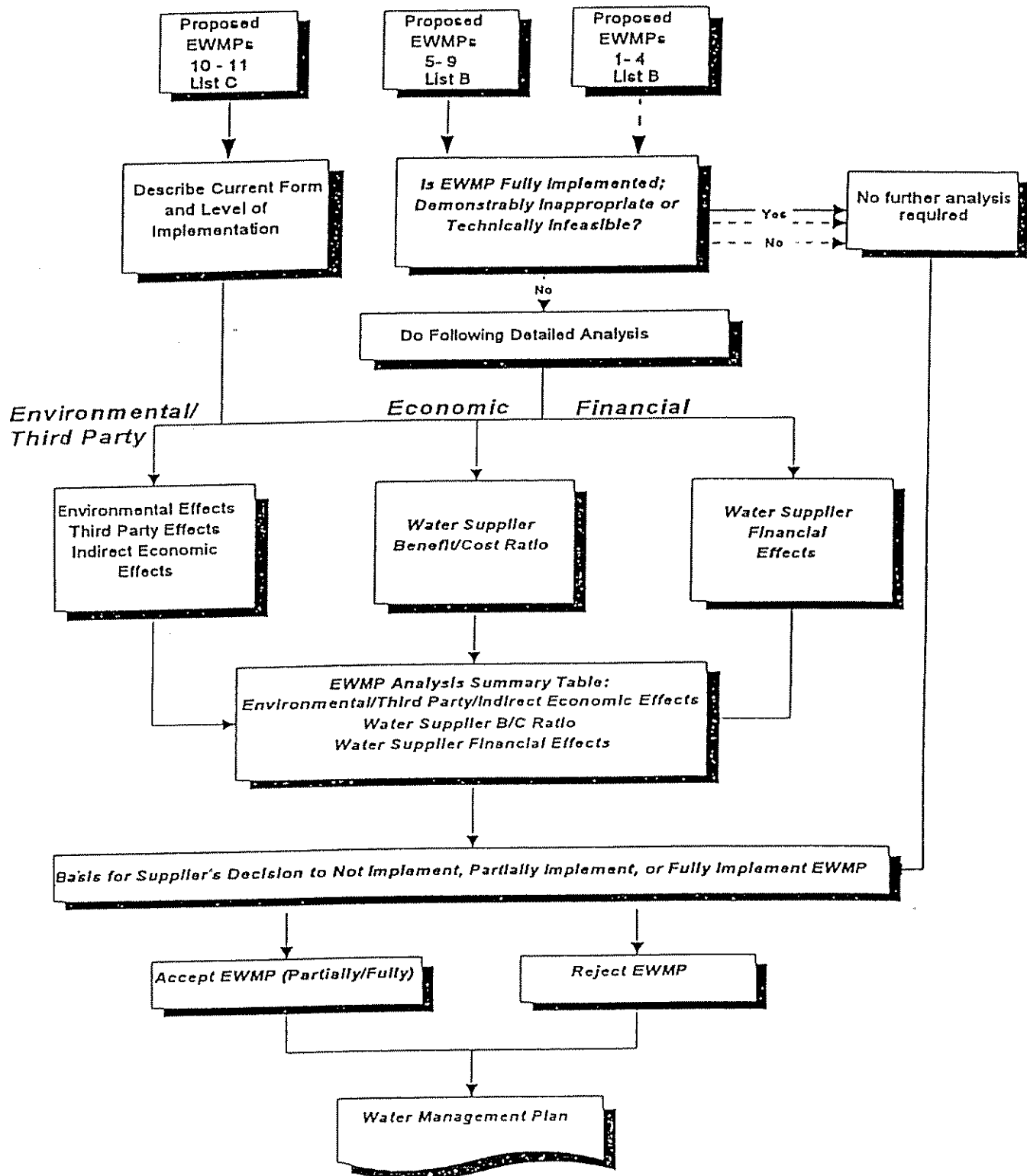


Table 1

EWMP Analysis Summary Table

	EWMP	EWMP Fully Implemented?	EWMP Demonstrably Inappropriate?	EWMP Technically Infeasible?	Environmental Effects				Third Party Allocation Effects				Indirect Economic Effects				Water Supplier B/C Ratio (25 Years)	Financial Analysis	EWMP Accepted? (Yes/No)
					B	N	I	IN	B	N	I	IN	B	N	I	IN			
List B Facilitating Practices	1. Facilitate Alternate Land Use																		
	2. Facilitate Use of Available Recycled Water																		
	3. Facilitate Financial Assistance																		
	4. Facilitate Voluntary Water Transfers																		
List B	5. Line or Pipe Ditches/Canals																		
	6. Increase Water Ordering/ Delivering Flexibility																		
	7. Construct/Operate Tailwater and Spill Recovery Systems																		
	8. Optimize Conjunctive Use																		
	9. Automate Canal Structures																		
List C	10. Water Measurement/ Water Use Update																		
	11. Pricing and Incentives																		

Shading = "Facilitate" EWMPs that use a different analysis to determine the extent a water supplier is able to facilitate them.

B = Beneficial; I = Insignificant; N = Negative; IN = Indeterminate



## PART 1

### Information to Determine if Detailed Analysis is Required for EWMPs 1-9

Please respond to these questions before you start Part 2 for each EWMP. Part 1 may help you to determine whether you need a detailed analysis for each EWMPs 1 through 9.

EWMP: \_\_\_\_\_

**A. Is this EWMP being implemented at a satisfactory level?**

☐ Yes ☐ No

If Yes, Please provide details and attach any report or documentation regarding implementation of this EWMP. Additional information may be requested by the reviewing committee should documentation be inadequate. If you believe the EWMP has been fully implemented and needs no further consideration, check the "EWMP Already in Place" box on the EWMP Analysis Summary Table and move on to the next EWMP.

If No, Please respond to B.

**B. Is EWMP demonstrably inappropriate for implementation by water supplier?**

☐ Yes ☐ No

If Yes, Please provide details, and attach any report or documentation regarding why implementation of this EWMP is demonstrably inappropriate. Additional information may be requested by the reviewing committee should documentation be inadequate. If you believe the EWMP is demonstrably inappropriate and needs no further consideration, check the "EWMP Demonstrably inappropriate" box on the EWMP Analysis Summary Table and move on to the next EWMP.

If No, Please respond to C.

**C. Is EWMP technically infeasible given current technology or prevailing local conditions?**

☐ Yes ☐ No

If Yes, Please provide details and attach any report or documentation regarding why implementation of this EWMP is technically infeasible. Additional information may be requested by the reviewing committee should documentation be inadequate. If you believe the EWMP is technically infeasible and needs no further consideration, check the "EWMP technically infeasible" box on the EWMP Analysis Summary Table and move on to the next EWMP.

If No, For EWMPs 1-4 go to the detailed net benefit analysis, Part 2; for EWMPs 5-9 go to the detailed net benefit analysis, Part 3.

## PART 2

### Detailed Analysis for EWMPs 1, 2, 3, and 4

This Section deals with the Part 2 (detailed analysis) for EWMPs 1, 2, 3, and 4 only. These are EWMPs that the water supplier may facilitate. These EWMPs need no benefit/cost ratio determination. The water supplier must answer the following questions pertaining to each of EWMP 1, 2, 3, and 4 separately.

**IMPORTANT:** Did the water supplier's evaluation of this EWMP on Part 1 indicate a need for detailed analysis? If yes, please proceed below. If no, please skip this EWMP and move on to the next EWMP.

EWMP: \_\_\_\_\_

**A. Does this EWMP impact any of the other EWMPs on List B and/or List C ?**

\_\_\_\_ Yes \_\_\_\_ No

If Yes, Discuss the expected impacts.

If No, Continue.

**B. Does the water supplier have the legal authority to implement this EWMP?**

\_\_\_\_ Yes \_\_\_\_ No

If Yes, Continue on to C.

If No, Are legal restrictions based on water supplier policy or policies imposed from an outside entity?

\_\_\_\_ Water Supplier Policy \_\_\_\_ Outside Entity Policy

If water supplier policy, attach the policy and discuss whether this policy can be modified to allow for your legal participation in the implementation of this EWMP.

If outside entity policy, name the entity and attach a description of the policy. Include a discussion of whether a cooperative agreement can be established to eliminate institutional barriers to your participation in the implementation of this EWMP. Continue.

**C. Has the water supplier approached or been approached by any customers or other entities concerning the potential for implementing this EWMP?**

\_\_\_\_ Yes \_\_\_\_ No

If Yes, Describe any previous efforts including the initial proposal, the parties involved, and proposal results in terms of actions or role taken by the water supplier in facilitating this opportunity, any positive results, and any difficulties encountered in water suppliers efforts  
Continue

If No, Continue

D. If the water supplier were to be approached with a proposal endorsed by water users, would the water supplier be willing to take an active role in facilitating this request?

☐ Yes ☐ No

If Yes, Attach a description of the role the water supplier could be reasonably expected to assume.

If No, Discuss why the water supplier cannot take a role in facilitating this EWMP.

E. Does the water supplier have adequate funding sources, or could funds reasonably be made available to implement this EWMP?

☐ Yes ☐ No

If Yes, Discuss the available funding sources. Continue.

If No, Discuss any financial constraints that exist. Continue.

F. Could the water supplier provide any incentives for customers for this EWMP?

☐ Yes ☐ No

If Yes, Describe the incentives that could potentially exist.

If No, Explain whether any other benefits exist for the water users by this EWMP.

G. Does the water supplier have the ability to secure and/or administer low-interest loans for customers?

☐ Yes ☐ No

If Yes, Discuss the level of funding support that the water supplier can reasonably be expected to provide in securing and/or administering the loans. Continue.

If No, Discuss any financial or other constraints that prohibit the water supplier from securing and/or administering loans. Continue.

## PART 3

### General Information for Detailed Analysis

Part 3 provides general information for EWMPs 5 through 11. Complete the following pages for those EWMPs identified by Part 1 as requiring a detailed analysis and EWMPs on List C.

#### EWMP 5. LINE OR PIPE DITCHES AND CANALS

A. Does this EWMP impact any of the other EWMPs on List B and/or List C ?

\_\_\_\_ Yes \_\_\_\_ No

If Yes, Discuss the expected impacts.

If No, Continue.

B. Complete the following matrix. Additionally, attach a description of how seepage flows were determined (e.g., consultant report, field study, water budget).

Estimated length of canals, ditches in service area (miles)	
Ditches/canals currently unlined (miles)	
Ditches/canals currently lined (miles)	
Pipelines in service area (miles)	
Potential average seepage flows from unlined ditches/canals (ac-ft/yr)	
Potential average recovered seepage flows from unlined ditches/canals (ac-ft/yr)	
Estimated average seepage flows which exit and are lost to service area (ac-ft/yr)	
Estimated average seepage flows which exit and are lost to the basin (ac-ft/yr)	
Estimated average seepage flows which exit and are lost to the saline sink (ac-ft/yr)	

C. Was this EWMP considered in coordination with any other EWMPs or other neighboring water suppliers?

\_\_\_\_ Yes \_\_\_\_ No

If Yes, Describe those proposals.

If No, Continue.

#### EWMP 6. INCREASE FLEXIBILITY IN WATER ORDERING AND DELIVERY TO THE WATER USERS WITHIN OPERATIONAL LIMITS

A. Does this EWMP impact any of the other EWMPs on List B and/or List C?

\_\_\_\_ Yes \_\_\_\_ No

If Yes, Discuss the expected impacts

If No, Continue.

B. Please attach a description of any additional facilities and/or components that may be needed to increase operational flexibility and how quickly a supplier can go from receiving an order to delivering an order. Include in this description: any facilities that may need to be installed to increase flexibility; how quickly a supplier can go from receiving an order to delivering an order; estimated project life span; estimated potential annual water savings; and how those savings were estimated. Also briefly discuss whether other variations of the project were considered.

C. Was this EWMP considered in coordination with any other EWMPs or other neighboring water suppliers?

\_\_\_ Yes \_\_\_ No

If Yes, Describe those proposals.

If No, Continue.

#### EWMP 7. CONSTRUCT AND OPERATE WATER SUPPLIER'S SPILL RECOVERY AND TAILWATER REUSE SYSTEM

A. Does this EWMP impact any of the other EWMPs on List B and/or List C?

\_\_\_ Yes \_\_\_ No

If Yes, Discuss the expected impacts.

If No, Continue.

B. Complete the following matrix (if unavailable, indicate "unknown" in the matrix). Additionally, please attach a description of how spill and seepage losses were determined (e.g., consultant report, field study, water budget).

Estimate average amount spill/tailwater produced (ac-ft/yr)	
Quantity of average spill/tailwater/drainage released from service area (ac-ft/yr)	

C. If available, provide information on the average spill/tailwater/drainage water quality leaving the service area in the matrix.

Constituent	Concentrations
Total Dissolved Solids/EC	
Selenium (if applicable)	
Boron (if applicable)	
Other Constituents of Concern that may be detrimental for soil or crop production: _____	

D. Please attach a description of the potential spill/tailwater reuse system. Include in this description: number and types of recovery pumps to be used; expected capacity of the recovery system (cfs or gpm); estimated project life span; estimated potential annual water recovery (acre-feet); and how those recoveries were estimated and method of estimation. Also briefly discuss whether other variations of the project were considered.

E. Was this EWMP considered in coordination with any other EWMPs or other neighboring water suppliers?

☐ Yes ☐ No

If Yes, Describe those proposals.

If No, Continue.

#### EWMP 8. OPTIMIZE CONJUNCTIVE USE OF SURFACE WATER AND GROUND WATER

A. Does this EWMP impact any of the other EWMPs on List B and/or List C?

☐ Yes ☐ No

If Yes, Discuss the expected impacts and continue.

If No, Continue.

B. Please provide estimates in the following matrix.

Ground water pumped in average supply year (ac-ft/yr)	
Maximum ground water pumping capability (ac-ft/yr)	
Surface water deliveries in normal year (ac-ft/yr)	
Surface water deliveries in deficit year (ac-ft/yr)	

C. The goal of this EWMP is to optimize conjunctive use for the water supplier. It is understood that to optimize conjunctive use, components will vary drastically in any given year in order to most efficiently use available supplies.

With this in mind, please attach a description of the current program (if any) and the proposed program. Include specifics when permanent facilities (e.g., ponding basins, regulatory reservoirs) or the equipment (e.g., extraction wells) would be needed. Otherwise, briefly discuss the following: method of conjunctive use (e.g., direct recharge, in-lieu exchanges with other suppliers, incidental recharge through overapplication of applied water, or a combination), location of permanent facilities or equipment to be installed for the program, estimated life span of facilities and equipment, estimated potential annual water savings and method of estimating savings, and potential sources of surface water to be used for recharge within and outside of the water supplier's service area. Additionally, please discuss whether possible conjunctive use opportunities with the other water suppliers were considered.

## EWMP 9. AUTOMATE CANAL STRUCTURES

- A. Does this EWMP impact any of the other EWMPs on List B and/or List C?

☐ Yes ☐ No

If Yes, Discuss the expected impacts.

If No, Continue.

- B. Complete the following matrix.

Number of locations within the distribution system which are automated	
Estimate the number of locations within the distribution system which could potentially be automated	

- C. Please attach a description of the potential automated canal structure system. Include in this description: number and types of canal structures to be used; estimated project life span; estimated potential annual water savings (acre-feet); and how those savings were estimated. Also briefly discuss whether other variations of the project were considered.

- D. Was this EWMP considered in coordination with any other EWMPs or other neighboring water suppliers?

☐ Yes ☐ No

If Yes, Describe those proposals.

If No, Continue.

## EWMP 10. WATER MEASUREMENT AND WATER USE REPORT

- A. Does this EWMP impact any of the other EWMPs on List B?

☐ Yes ☐ No

If Yes, Discuss the expected impacts.

If No, Continue.

- B. Please describe the current and/or proposed water measurement/calculation practices. The description should include measurement/calculation of volume of water delivered within a reasonable range of accuracy. The description may be based on deliveries to individual water users or other reasonable measurement options.

- C. Was this EWMP considered in coordination with any other EWMPs or other neighboring water suppliers?

☐ Yes ☐ No

If Yes, Describe those proposals.

If No, Continue.

## **EWMP 11. PRICING OR OTHER INCENTIVES**

For a pricing structure to be considered an EWMP, it must encourage the more efficient use of water.

### **A. Specific Objectives**

A clearly defined, specific objective must be established before a pricing incentive procedure is implemented.

### **B. Practices**

Please identify those pricing and other incentives practices the supplier is considering and those that are currently in place as identified in the WMP. Has the water supplier considered the following practices?

#### **(a) Pricing.**

##### **(1) Tiered water pricing (increasing block rates)**

☐ Yes ☐ No

If Yes, Please attach a description of the tiered water pricing structure that is to be implemented and whether it is revenue neutral or whether it will be used to establish other incentive programs.

If No, Please attach a description of the reason for its rejection.

This practice can set higher prices to penalize water users who apply greater amounts of water than is required for crop ET, leaching requirements, and other beneficial uses. Caution must be used to prevent the substitution of groundwater for surface water unless that is the stated objective.

##### **(2) Wet vs. dry year pricing structure**

☐ Yes ☐ No

If Yes, Please attach a brief description of the pricing structure that is proposed to be implemented and its effect (i.e., lower prices during wet years to encourage maximizing groundwater recharge, or higher prices in dry years to encourage groundwater pumping to leave surface water for other beneficial uses)



If No, Please attach a description of the reason for its rejection.

(3) Uniform block pricing

☐ Yes ☐ No

If Yes, Please attach a description of the changes to existing rate structure and the efficiency improvements expected from this change.

If No, Please attach a brief description of the reason for its rejection.

(4) Other

☐ Yes ☐ No

If Yes, Please attach a brief description.

If No, Disregard.

(b) Other incentives

(1) Supplier buy-back program

☐ Yes ☐ No

If Yes, Please describe the incentives provided by the program.

If No, Please describe the reason for its rejection.

If a supplier buys water back from growers, the growers should not substitute groundwater for surface water unless that is an intended purpose.

(2) Low interest loans

☐ Yes ☐ No

If Yes, Please attach a description of the funding source of these incentives or management improvements (e.g., contingency funds etc.).

If No, Briefly describe the reason for its rejection.

(3) Cost sharing for on-farm improvements

☐ Yes ☐ No

If Yes, Please attach a description of the funding source for these incentives.

If No, Please attach a brief description of the reason for its rejection.

Does this EWMP impact any other EWMIPs?

☐ Yes ☐ No

If Yes, Discuss the expected impacts.

If No, Continue.

**E. Was this EWMP considered in coordination with any other EWMPs or other neighboring water suppliers ?**

☐ Yes ☐ No

If Yes, Attach a description of these proposals.

If No, Continue.

## PART 4

### EWMP Environmental, Third Party, and Indirect Economic Analysis

Part 4 addresses potential environmental, third party, and indirect economic impacts for EWMPs 5 through 11. After identifying which EWMPs will require a detailed analysis (from Part 1), please make copies of Part 4 so that you can use these pages as worksheets for your analysis. As you analyze each EWMP, fill in the name of the EWMP in the space provided below. Worksheets may be used for EWMPs 5 through 11.

EWMP: \_\_\_\_\_

NOTE: For the following sections, any indeterminate effects on the environment or third parties may require further study.

The intent of this process is to be broad enough to encompass most scenarios that would exist in all water supplier service areas. However, if your interpretation of any potential effect for the following questions differs from the one stated, please feel free to attach an explanation for that particular question.

#### ENVIRONMENTAL EFFECTS

##### A. Source of Supply

Will implementation of the EWMP result in reduced water demand in the water supplier's service area?  
\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, There may be a potential beneficial/negative impact, check the appropriate column on the Potential Environmental Effects Summary, Table 2, and attach a description of the intended use of the water (e.g. stored in reservoir, instream flows, etc.)

If No, Check Insignificant on Table 2, Potential Environmental Effects Summary.

If Unknown, Check Indeterminate on the Potential Environmental Effects Summary Table 2.

##### B. Confined/Unconfined Ground Water Levels

Are there any habitats in the water service area that are supported/supplied by existing groundwater levels?  
\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, See below.

If No, Check Insignificant on Table 2. Attach a description explaining why implementation will not result in reduced diversions

If Unknown, Check Indeterminate.

If Yes, Will implementation of the EWMP affect the groundwater levels?  
\_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ Neither \_\_\_\_ Unknown

If Yes, Check appropriate column on Table 2. Include a description of the habitat, and how the habitat would be impacted by changes in the groundwater levels.

If No or Neither, Check Insignificant on Table 2. Please attach a description of the habitat and estimated increased supply.

If Unknown, Check Indeterminate on Table 2.

C. Shallow Groundwater (does not apply to EWMP 9)

Is the water supplier located in an area where shallow groundwater and/or water quality problems (i.e., salinity, selenium) limit the use of land and/or drainage water?  
\_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ Unknown

If Yes, Do you anticipate that shallow groundwater conditions will improve or degrade as a result of implementation of the EWMP?  
\_\_\_\_ Improve \_\_\_\_ Degrade \_\_\_\_ Neither \_\_\_\_ Unknown

If Improve, Improved groundwater conditions should create an overall environmental benefit; check Beneficial. Please attach a description of improved conditions with respect to water levels and quality (in terms of TDS and/or known constituents of concern).

If Degrade, Check Negative. Please attach a description of the expected degraded conditions with respect to water levels and quality (in terms of TDS and/or known constituents of concern).

If No, Check Insignificant.

If Unknown, Check Indeterminate.

If Neither, Check Insignificant. Attach a description explaining why shallow groundwater will not be impacted.

If Unknown, Check Indeterminate.

D. Instream Flows

Does the water supplier's distribution system contribute to flows in any other water courses?  
\_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ Unknown

If No, Check Insignificant

If Unknown, Check Indeterminate.

If Yes, Will implementation of the EWMP affect flows to any other water courses?  
\_\_\_ Yes \_\_\_ No \_\_\_ Neither \_\_\_ Unknown

If Yes, Check appropriate column on Table 2. Include a description of the positive or negative impacts on the flows, and how the habitat would be impacted by changes.

If No or Neither, Check Insignificant on Table 2.

If Unknown, Check Indeterminate on Table 2.

#### E. Drain Flows

Does the water supplier's service area have drains that supply or support habitat?  
\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If No, Check Insignificant.

If Unknown, Check Indeterminate.

If yes, Will these drain flows be reduced as a result of practices associated with the EWMP?  
\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, there is a potential negative impact; check Negative and include a description on the adverse effects to any habitat.

If Unknown, Check Indeterminate.

If No, Do you anticipate that drain water quality will improve or degrade as a result of implementing the EWMP?  
\_\_\_ Improve \_\_\_ Degrade \_\_\_ Neither \_\_\_ Unknown

If Improve, Improved drain water conditions should create an overall environmental benefit; check beneficial. Please attach a description of improved conditions with respect to quality (in terms of TDS and/or known constituents of concern).

If Degrade, Check Negative. Please attach a description of the expected degraded conditions with respect to quality (in terms of TDS and/or known constituents of concern).

If Neither, Check Insignificant.

If Unknown, Check Indeterminate.

**F. Fertilizer/Herbicide/Pesticide Use**

Are pesticides/herbicides used to control vegetative growth or burrowing along ditches/canals?

☐ Yes ☐ No

If No, Check Insignificant.

If Yes, Will pesticide/herbicide use by the water supplier along ditches/canals be decreased or increased as a result of piping or lining?

☐ Decrease ☐ Increase ☐ Neither ☐ Unknown

If Neither, Check Insignificant on Table 2.

If Unknown, Check Indeterminate on Table 2.

If Decrease/  
Increase,

There may be a potential impact on the environment. Please check the appropriate column on Table 2 and attach a description of the potential impacts of the increase/decrease in pesticide use.

**G. Soil Erosion**

Will implementation of the EWMP reduce the current amount of soil erosion in the water supplier service area?

☐ Yes ☐ No ☐ Unknown

If Unknown, Check indeterminate.

If Yes/No, There may be a potential impact on the environment. Please check the appropriate column on Table 2 and attach a description of the potential impacts of the EWMP.

**H. Field Burning and/or Fugitive Dust (for EWMP 5)**

Is vegetation removed from canal banks by burning?

☐ Yes ☐ No

If No, Check Insignificant.

If Yes, Would this burning decrease as a result of lining or piping ditches/canals?

☐ Yes ☐ No ☐ Neither ☐ Unknown

If Yes/No, There may be a potential impact on the environment. Please check the appropriate column on Table 2 and attach a description of the potential impacts of the EWMP.

If Neither,      Check Insignificant.

If Unknown,      Check Indeterminate.

### I. Energy Use

Would this EWMP increase or decrease energy use (e.g., pump use, canal structure controls, etc.)?  
\_\_\_ Decrease \_\_\_ Increase \_\_\_ Neither \_\_\_ Unknown

If Decrease,      Less energy consumption and/or lower air emissions would be potential environmental benefits; check beneficial.

If Increase,      Check Negative.

If Neither,      Check Insignificant.

If Unknown,      Check Indeterminate.

### J. Do ditches/canals that might be considered for lining/piping supply or support any of the following habitats:

Yes	No
___	___ Vernal pools and swales
___	___ Riparian
___	___ Open water bodies
___	___ Marshes (permanent or seasonal)

Please attach a description to any "Yes" answers to the previous question. Include in your description any known or potential sensitive plant and wildlife species in the habitat and the approximate size and location of the habitat. If the habitat is a series of smaller parcels (e.g., vernal pools) just describe the general location. Also identify your source of information. Finally, on Table 2 check whether you believe that the potential impact to the habitat would be beneficial, negative, insignificant, or indeterminate; attach a description and justification.

## THIRD-PARTY EFFECTS

### A. Confined/Unconfined Ground Water Levels

Will implementation of the EWMP affect groundwater elevations?  
\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes,      Rise or fall of the groundwater levels could have potential benefit or negatively affect the third-party groundwater users in the basin; check appropriate column on Table 3, Potential Third-Party Effects Summary. Attach a description of the anticipated effect on groundwater levels and third-party users.

If No, Check appropriate column on Table 3. Attach a description as to why you expect groundwater levels to remain unchanged.

If Unknown, Check Indeterminate on Table 3.

## B. Instream Flows

Do water supplier distribution flows contribute to any natural streams?

☐ Yes ☐ No ☐ Unknown

If No, Check Insignificant, go to C.

If Unknown, Check Indeterminate.

If yes, Will implementation of the EWMP decrease or increase instream flows to any streams that supply or support any third-party?

☐ Decrease ☐ Increase ☐ Neither ☐ Unknown

If Decrease, There may be a potential negative effect to third-party users; check Negative on Table 3. Include a description of the potential adverse effects on third-party users by reduced instream flows.

If Increase, Creating additional supplies may result in a benefit; check Beneficial. Please attach a description of the potential benefits and estimated increased supply.

If Neither, Check Insignificant.

If Unknown, Check Indeterminate.

## C. Drain Flows

Do drain flows supply or support any third-party user?

☐ Yes ☐ No

If Yes, Do you anticipate that drain water conditions will be affected as a result of implementation of the EWMP?

☐ Yes ☐ No ☐ Unknown

If Yes, Improved or adversely affected drain water may have an overall benefit or detrimental effects to the third parties; check appropriate column on Table 3. Please attach a description of drain water conditions with respect to quality (in terms of TDS and/or known constituents of concern)

If No, Check appropriate column on Table 3. Please attach a description of the expected degraded conditions with respect to quality (in terms of TDS and/or known constituents of concern).



If Unknown,      Check Indeterminate.

D. Herbicide/Pesticide Use (applies only to EWMP 5)

Are pesticides/herbicides used to control vegetative growth or burrowing along distribution system banks?

☐ Yes ☐ No

If Yes,      Does water that flows through water supplier ditches or canals continue on to third-party users (such as M&I)?

☐ Yes ☐ No

If No,      Check Insignificant.

If Yes,      Will fewer pesticides/herbicides be applied by the agricultural water supplier as a result of implementing the EWMP?

☐ Yes ☐ No

If No,      Check Insignificant.

If Yes,      There may be a potential impact on third parties. Please check the appropriate column on Table 3 and attach a description of the potential impacts of the EWMP.

If No,      Check Insignificant.

E. Wind/Water Soil Erosion

Will implementation of the EWMP reduce the current amount of soil erosion in the water supplier service area?

☐ Yes ☐ No ☐ Unknown

If Yes,      There may be a potential impact on third parties. Please check the appropriate column on the Table 3 and attach a description of the potential impacts of the EWMP.

If no,      Check insignificant.

If Unknown,      Check indeterminate.

INDIRECT ECONOMIC EFFECTS

A. Will the EWMP affect local economies through changes in on-farm operations (indirect economic effects)?

☐ Yes ☐ No ☐ Unknown

If Yes,      Please describe.

If No, Check Insignificant on Table 4, Potential Indirect Farm Production Effects Summary, Sections B, C, and D.

If Unknown, Check Indeterminate on Table 4, Sections B, C, and D.

**B. Will practices associated with implementation of the EWMP increase or decrease farmers' purchases of crop inputs such as seed, fertilizer, irrigation equipment, etc.?**

☐ Increase ☐ Decrease ☐ Neither ☐ Unknown

If Increase, There may be a potential benefit; check beneficial on Table 4, Section B.

If Decrease, There may be a potential negative effect; check Negative on Table 4, Section B.

If Neither, Check Insignificant.

If Unknown, Check Indeterminate.

**C. Will practices associated with implementation of the EWMP increase or decrease the hiring of local (county) farm workers?**

☐ Increase ☐ Decrease ☐ Neither ☐ Unknown

If Increase, There may be a potential benefit; check beneficial on Table 4, Section C.

If Decrease, There may be a potential negative effect; check Negative.

If Neither, Check Insignificant.

If Unknown, Check Indeterminate.

**D. Will practices associated with the implementation of the EWMP increase or decrease the local (county) processing of farm produce (examples—canning of nuts, fruits, and vegetables; milk production supported by cows/pasture; etc.)?**

☐ Increase ☐ Decrease ☐ Neither ☐ Unknown

If Increase, There may be a potential benefit; check Beneficial on Table 4, Section D.

If Decrease, There is a potential negative effect; check Negative.

If Neither, Check Insignificant.

If Unknown, Check Indeterminate.

Table 2. Potential Environmental Effects Summary

Section	Evaluated Component	Beneficial	Negative	Insignificant	Indeterminate
A	Source of Supply				
B	Confined/Unconfined Groundwater Levels				
C	Shallow Groundwater Elevations				
D	Instream Flows				
E	Drain Flows				
F	Fertilizer/Herbicide/ Pesticide Use				
G	Soil Erosion				
H	Field Burning and Fugitive Dust				
I	Energy Use				
J	Vernal Pools and Swales				
K	Riparian Habitat				
L	Open Water Bodies				
M	Marshes (permanent or seasonal)				

Table 3. Potential Third-Party Effects Summary

Section	Evaluated Component	Beneficial	Negative	Insignificant	Indeterminate
A	Confined/Unconfined Ground Water Levels				
B	Instream Flows				
C	Drain Flows				
D	Herbicide/Pesticide Use				
E	Wind/Water Soil Erosion				

Table 4. Potential Indirect Farm Production Effects Summary

Section	Evaluation Component	Beneficial	Negative	Insignificant	Indeterminate
B	Farm Inputs				
C	Local Farm Labor				
D	Processing of Farm Produce				

## PART 5

### EWMP Economic Analysis

Part 5 evaluates the economic benefits and costs of EWMPs 5 through 11. Worksheets 1 through 4 enable the water supplier to develop a benefit/cost (B/C) ratio for these EWMPs from the water supplier perspective. Worksheets can be used for EWMPs 5 through 11.

#### Worksheet 1. EWMP Water Supplier Effects

How much water is estimated to be conserved annually as a result of the EWMP?

\_\_\_\_\_ acre-feet

Please discuss your assumptions and methodology for deriving this estimate.

Does the EWMP result in water supplier capital costs and/or annual operation and maintenance costs?

\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, Please complete Worksheet 2 and continue.

If No or Unknown, Please describe.

Would the EWMP reduce current water supplier water purchases, water diversions, and/or groundwater pumping?

\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, Please complete Worksheet 3a and continue.

Would the EWMP delay or eliminate the need to complete future water supply augmentation and/or distribution projects?

\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, Please complete Worksheet 3b.

Would the EWMP result in additional sales of water supplies to existing customers, new customers, and/or other agencies?

\_\_\_ Yes \_\_\_ No \_\_\_ Unknown

If Yes, Please complete Worksheet 3c.

## Worksheet 2. EWMP Water Supplier Costs

### 2a. EWMP Water Supplier Capital Costs

Complete the following worksheet for EWMP capital costs:

Capital Cost Category (a)	Item (b)	Cost (c)	Contingency Cost		Subtotal (c + e) (f)
			Percent (d)	Dollars (c x d) (e)	
Planning			0.15		
Land			0.15		
Structures			0.15		
Equipment			0.15		
Mitigation			0.15		
Other			0.15		
Subtotal Capital Costs					
Deduct Expected Salvage Value After 25 Years					
Total Capital Costs					
Capital Recovery Factor (6%, 25 Years)					0.0782
Annual Capital Costs (Total Costs x CRF)					

Enter Annual Capital Costs into Worksheet 2c, Column (a).

### 2b. EWMP Water Supplier Annual O&M Costs

Complete the following worksheet for EWMP annual O&M costs.

Annual Operating Costs  (a)	Annual Maintenance Costs  (b)	Annual Other Costs <sup>1</sup>  (c)	Total O&M Costs (a + b + c) (d)

<sup>1</sup>Other annual costs not included in O&M, such as annual environmental mitigation costs.

Enter Total O&M Costs into Worksheet 2c, Column (d).

## 2c. EWMP Water Supplier Costs/AF Summary

Complete the following worksheet for EWMP cost/af summary:

Annual Capital Costs <sup>1</sup>  (a)	Annual O&M Costs <sup>2</sup>  (b)	Total Annual Costs (a + b) (c)	Annual Conserved Water <sup>3</sup> (AF) (d)	Cost/ AF (c/d) (e)

<sup>1</sup>From Worksheet 2a.

<sup>2</sup>From Worksheet 2b.

<sup>3</sup>From Worksheet 1.

Enter the cost/af onto Worksheet 4, EWMP Cost.

## Worksheet 3. EWMP Water Supplier Benefits

Note: The value of the conserved water to the water supplier is determined by how the conserved water is used. If the conserved water allows the water supplier to reduce the amount of water purchased, diverted or pumped, then the value is equal to the avoided cost of obtaining water from the supplier's most expensive current water source. However, if the water supplier needs to augment water supplies to meet future demands, then the value to the water supplier is measured by the least-cost alternative that can be eliminated or delayed because of the EWMP. Finally, if the water supplier plans to sell all or part of the conserved water to existing customers, new customers or other agencies, then the value can be measured by the price for which it is sold, thus generating additional revenue. Choose the most appropriate method.

### 3a. Water Supplier Avoided Costs—Current Sources

Complete the following worksheet for current sources of supply that would be avoided with the implementation of the EWMP:

Sources of Supply Avoided (a)	Amount of Water (af) (b)	Annual O&M Costs (\$/af) (c)	Source to be Used as Benefit Measure (d)

Enter the avoided cost (\$/af) from the sources selected into Worksheet 4, EWMP Benefit.

### 3b. Water Supplier Avoided Costs—Future Sources

Complete the following worksheet for future sources eliminated or delayed because of implementation of EWMP:

Alternative (a)	Total Capital Costs (b)	Capital Recovery Factor <sup>1</sup> (c)	Annual Capital Costs (b x c) (d)	Annual O&M Costs (e)	Total Annual Costs (d + e) (f)	Annual Yield (g)	Cost/af (f / g) (h)
		0.0782					
		0.0782					
		0.0782					
		0.0782					

<sup>1</sup>For a 25-year period with 6% discount rate.

Which alternative is to be selected as benefit measure? Explain:

Enter the cost/af value for alternative selected into Worksheet 4, EWMP Benefit.

### 3c. Water Supplier Revenue Effects

Complete the following worksheet:

Parties Purchasing Conserved Water (a)	Amount of Water (af) (b)	Selling Price (\$/af) (c)	Expected Frequency of Sales (%) <sup>1</sup> (d)	Expected Selling Price (\$/af) (c x d) (e)	"Option" Fee (\$/af) <sup>2</sup> (f)	Total Selling Price (\$/af) (e + f) (g)

<sup>1</sup>During a 25-year analysis period, how many years are water sales expected to occur? For example, water sales to farmers might be expected to occur 90% of the years, whereas the frequency to other agencies might be 50% of the years.

<sup>2</sup>"Option" fees are paid by a contracting agency to a selling agency to maintain the right of the contracting agency to buy water whenever needed. Although the water may not be purchased every year, the fee is usually paid every year.

Enter the expected selling price (revenue) into Worksheet 4, EWMP Benefit.

#### Worksheet 4. EWMP Water Supplier Benefit/Cost Ratio

Complete the following worksheet:

Benefits and Costs	
EWMP Benefit (\$/af) <sup>1</sup>	
EWMP Cost (\$/af) <sup>2</sup>	
Benefit/Cost Ratio	

<sup>1</sup>From Worksheet 3a, 3b or 3c.

<sup>2</sup>From Worksheet 2.



## Part 6

### EWMP Financial Analysis

A water supplier may claim an exemption if:

"Adequate funds (including funds from other beneficiaries of the plan) are not available, and cannot reasonably be expected to be made available, for implementation of the EWMP during the term of the plan."  
(MOU, Section 4.02)

If water supplier is claiming an exemption based upon the lack of available funding, please discuss the reasons for this finding. Please include a copy of your latest financial statement and a list of other potential plan beneficiaries who have been contacted.

# Part 7

## Summary of Analysis

### Initial Evaluation Table (from Part 1)

EWMP	Yes	No
Fully Implemented		
Demonstrably Inappropriate		
Technically Infeasible		

### Potential Environmental Effects Summary Table (from Part 4)

Section	Evaluated Component	B	N	I	IN
A	Source of Supply				
B	Confined/Unconfined Groundwater Levels				
C	Shallow Groundwater Elevations				
D	Instream Flows				
E	Drain Flows				
F	Fertilizer/Herbicide/Pesticide Use				
G	Soil Erosion				
H	Field Burning and Fugitive Dust				
I	Energy Use				
J	Vernal Pools or Swales				
K	Riparian Habitat				
L	Open Water Bodies				
M	Marshes (permanent or seasonal)				

### Potential Third-Party Effects Summary Table (from Part 4)

Section	Evaluated Component	B	N	I	IN
A	Confined/Unconfined Groundwater Levels				
B	Instream Flows				
C	Drain Flows				
D	Herbicide/Pesticide Use				
E	Wind/Water Soil Erosion				

### Indirect Economic Effects Summary Table (from Part 4)

Section	Evaluated Component	B	N	I	IN
B	Farm Inputs				
C	Local Farm Labor				
D	Processing of Farm Produce				

# EWMP Economic Analysis (from Part 5)

Enter Water Supplier B/C Ratio	
--------------------------------	--

## EWMP Financial Analysis (from Part 6)

	Yes	No
Can adequate funding be expected to be made available?		

	Yes	No
Is EWMP accepted?		

Please provide here and in the WMP a discussion of why the EWMP is accepted or rejected for implementation. Please include a discussion of estimated water savings, environmental effects, third-party effects , etc. for this EWMP.



**Attachment 3**

**Draft Environmental Impact Report/  
Environmental Impact Statement Imperial  
Irrigation District Water Conservation and  
Transfer Project and Draft Habitat  
Conservation Plan  
CH2M Hill**



**Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)  
Imperial Irrigation District Water Conservation and Transfer Project and  
Draft Habitat Conservation Plan**

State Clearinghouse No. 99091142

Co-Lead Agencies:      Lead Agency for the EIR:      Imperial Irrigation District (IID)  
                                 Lead Agency for the EIS:      U.S. Bureau of Reclamation (Reclamation)

Cooperating Agency:    U.S. Fish and Wildlife Service

Responsible Agencies:   California Department of Fish and Game  
                                 State Water Resources Control Board  
                                 San Diego County Water Authority

**ABSTRACT**

IID is proposing to implement a water conservation and transfer project that would serve and transfer the right to use up to 300,000 acre-feet per year of Colorado River water which IID is otherwise entitled to divert for use within IID's water service area in Imperial County, California. The conserved water would be transferred by IID to San Diego County Water Authority (SDCWA), Coachella Valley Water District (CVWD), and/or Metropolitan Water District (MWD). The terms of the water conservation and transfer transactions are set forth in the Agreement for Transfer of conserved water (IID/SDCWA Transfer Agreement) executed by IID and SDCWA in 1998, as amended, and a proposed Quantification Settlement Agreement (QSA) to be executed by IID, CVWD, and MWD. These transfers, which are to remain in effect for up to 75 years, will facilitate efforts to reduce California's diversions of Colorado River water in normal years to its annual 4.4 million acre-feet apportionment. The Secretary of the Interior must approve the change in the point of delivery for the transferred water.

The Proposed Project includes implementation of a Habitat Conservation Plan (HCP) to address impacts to covered species and habitats within the IID water service area, the right-of-way of the All American Canal (AAC), and the Salton Sea. Pursuant to Section 10(a)(1)(B) of the Endangered Species Act, USFWS must approve the HCP and issue a Section 10 permit to authorize the incidental take of covered species associated with IID's proposed water conservation and transfer project, as well as IID's ongoing operation and maintenance activities.

This Draft EIR/EIS has been prepared pursuant to the requirements of the National Environmental Policy Act of 1969, as amended, and the California Quality Act of 1970.

Comments on this document must be submitted to one or both of the following by April 12, 2002:

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Phoenix Area Office (PXAO-1500)	Imperial Irrigation District
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For further information regarding this Draft EIR/EIS, please contact: Mr. Bruce Ellis at the Bureau of Reclamation, (602) 216-3854, or Mr. Grubaugh at the Imperial Irrigation District, (760) 339-9109.





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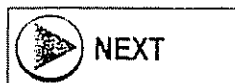
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